

AMENDMENTS TO THE CLAIMS

Claims 1-30 (Canceled).

31. (Currently Amended) A reworked metallic braking rotor or drum having a braking surface adapted to engage a brake pad or brake shoe, respectively, in dry sliding contact and frictional loading characterized in an initial manufacturing process by presence of residual tensile stresses and tooling mark indentations in said braking surface comprising:

an ultrasonically impacted reworked braking rotor or drum presenting a smoothed, plastically deformed braking surface with a compressed sub-surface layer, thereby introducing increased braking surface contact area.

32. (Canceled).

33. (Currently Amended) The braking rotor or drum of Claim ~~32~~ 31 further comprising a depth of said compressed sub-surface layer exceeding the limits of braking wear depth.

34. (Currently Amended) ~~The braking rotor or drum of Claim 31~~ A reworked metallic braking rotor or drum having a braking surface adapted to engage a brake pad or brake shoe, respectively, in dry sliding contact and frictional loading characterized in an initial manufacturing process by

presence of residual tensile stresses and tooling mark

indentations in said braking surface comprising:

an ultrasonically reworked braking rotor or drum
presenting a smoothed, plastically deformed braking surface
with a compressed sub-surface layer introducing increased
braking surface contact area,

wherein said reworked rotor or drum surface further
comprises a machined surface established by ultrasonic
impact machining with a set of individual randomly
~~ultrasonically driven~~ impacting indenter elements wherein
random movement of the indenter elements is accompanied by
ultrasonic oscillations of the elements upon contact with
the drum or the rotor surface and wherein frequency of the
random movement is equal to frequency of contact.

35. (Previously Presented) The braking rotor or drum
of Claim 31 wherein the smoothed plastically deformed
braking surface has a roughness not exceeding 200 micro-
inches.

36. (Canceled).

37. (Canceled).

38. (Canceled).

39. (Canceled).

40. (Currently Amended) ~~The A~~ reworked metallic
braking rotor or drum ~~of Claim 37~~ presenting having a

plastically deformed, smoothed ultrasonically impacted
braking surface with a compressed sub-surface layer, wherein
said braking surface has a surface roughness of less than
200 micro-inches and presents a uniform surface and sub-
surface stress profile under distribution over and to the
braking surface to a depth of 12 mm, thereby ensuring
uniform deformation eliminating stress concentration at the
surface and reducing possibility of crack development.

41. (Currently Amended) The reworked braking rotor or
drum of Claim ~~37~~ 40 wherein the braking surface is cast iron
with a strength exceeding the yield point of the cast iron
prior to reworking.

42. (Currently Amended) The reworked braking rotor or
drum of Claim ~~37~~ 40 wherein the braking surface has a
surface of higher contact area for abutment with the brake
lining.

43. (Currently Amended) The reworked braking rotor or
drum of Claim ~~37~~ 40 wherein the braking surface has a
smoother surface finish with ~~better~~ increased contact
surface area with the applied brake lining during operation
resulting in less heat build up during brake application
providing more efficient braking and a safer application of
the brake.

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44. (Canceled).

45. (Canceled).